

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort. Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 200206488-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Patel et al.

Confirmation No.:

Application No.: 10/656,588

Examiner:

Filing Date: Sept. 4, 2003

Group Art Unit:

Title: SELF-CONTAINED SPRAY COOLING MODULE

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of national application; or before mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97 (c) together with either a:
☐ Statement under 37 CFR 1.97(e), or
☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97 (d) together with a:
☐ Statement under 37 CFR 1.97(e)(1) or (2), and
☐ a \$180.00 fee set forth in 37 CFR 1.17(p).
(Filed after final action, a notice of allowance, on or before payment of the issue fee)

Please charge to Deposit Account **08-2025** the sum of \$0.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **08-2025** pursuant to 37 CFR 1.25.

☒ Applicant(s) submit herewith Form PTO 1449 - Information Disclosure Statement together with any required copies of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

☐ A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individuals(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed herewith.

It is requested that the information disclosed herein be made of record in this application.

- ☒ I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:
Commissioner for Patents, Alexandria, VA
22313-1450. Date of Deposit: Oct. 8, 2003

OR

- ☐ I hereby certify that this paper is being transmitted to the Patent and Trademark Office facsimile number _____ on _____
Number of pages: _____

Typed Name: Robert Longabaugh

Signature: Robert Longabaugh

Respectfully submitted,

Patel et al.

By John Griecci

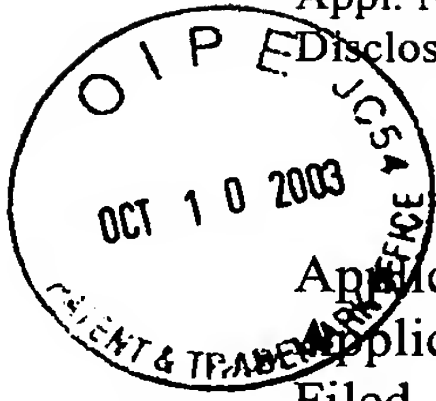
John Griecci

Attorney/Agent for Applicant(s)

Reg. No. **39,694**

Date: **Oct. 8, 2003**

Telephone No.: **(310) 376-6527**



Appl. No. 10/656,588

Disclosure of Pending Application, dated October 8, 2003

Application No. : 10/656,588
Applicant : PATEL et al.
Filed : September 4, 2003
5 Art Unit :
Examiner :

Confirmation No. _____

Docket No. : 200206488-1
Customer No. : 22879
10 Date: : October 8, 2003

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
15

DISCLOSURE OF PENDING APPLICATION

Dear Sir:

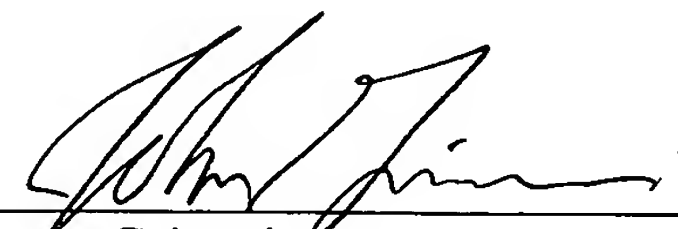
With respect to the above-identified application, Applicants respectfully note that
20 the following patent application includes claims directed to related technologies:

U.S. Patent Application, Serial No. 09/945,046, filed August 31, 2001.

The filing of this disclosure should not be construed to be either a suggestion or an
25 admission that the cited application is, or is considered to be, material to patentability
under 37 C.F.R. § 1.56(b).

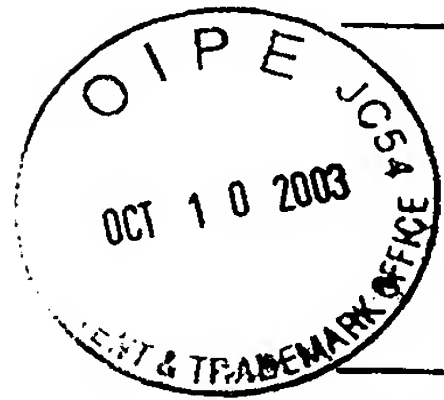
Respectfully submitted,

Patel et al.

By: 
35 John A. Griecchi
Registration No. 39,694
For: The Law Office of John A. Griecchi

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PATENT APPLICATION



FORM PTO-1449

LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANT'S INFORMATION DISCLOSURE
STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET NO.

200206488-1

SERIAL NO.

10/656,588

APPLICANT

PATEL et al.

FILING DATE

September 4, 2003

GROUP

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS
	6,205,799 B1	Mar. 27, 2001	Patel et al.	62	132
	6,182,742 B1	Feb. 6, 2001	Takahashi et al.	165	104.33
	6,108,201	Aug. 22, 2000	Tilton et al.	361	689
	5,943,211	Aug. 24, 1999	Havey et al.	361	699
	5,924,198	Jul. 20, 1999	Swanson et al.	29	890.1
	5,907,473	May 25, 1999	Przilas et al.	361	699
	5,724,824	Mar. 10 1998	Parsons	62	171
	5,718,117	Feb. 17, 1998	McDunn et al.	62	64
	5,434,606	Jul. 18, 1995	Hindagolla et al.	347	45
	5,278,584	Jan. 11, 1994	Keefe et al.	346	140 R
	5,220,804	Jun. 22, 1993	Tilton et al.	62	64

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRANSLATION	
						YES	NO

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

	Sehmbey, M.S., Pais, M.R. and Chow, L.C., "Effect of Surface Material Properties and Surface Characteristics in Evaporative Spray Cooling," THE JOURNAL OF THERMOPHYSICS & HEAT TRANSFER, July-September, 1992, Vol. 6, No. 3, pp 505-511.
	Pais, Martin R., Chang, Ming J., Morgan, Michael J. and Chow, Louis C., "Spray Cooling of a High Power Laser Diode, SAE AEROSPACE ATLANTA CONFERENCE & EXPOSITION, DAYTON, OHIO, 1994, pp 1-6.
	Morgan, Michael J., Chang, Won S., Pais, Martin R. and Chow, Louis C., "Comparison of High Heat-Flux Cooling Applications," SPIE, 1992, Vol. 1739, pp17-28

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS
	4,794,410	Dec. 27, 1988	Taub et al.	346	140 R
	4,685,308	Aug. 11, 1987	Welker et al.	62	171
	4,683,481	Jul. 28 1987	Johnson	346	140 R
	4,576,012	Mar. 18, 1986	Luzenberg	62	157
	4,559,789	Dec. 24, 1985	Riek	62	157
	4,500,895	Feb. 19, 1985	Buck et al.	346	140 R
	4,490,728	Dec 25, 1984	Vaught et al.	346	1.1
	4,352,392	Oct. 5, 1982	Eastman	165	104.25
	4,290,274	Sep. 22, 1981	Essex	62	157
	4,141,224	Feb. 27, 1979	Alger et al.	62	514 R
	2,875,263	Feb. 24, 1959	Narbut	174	15

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRANSLATION	
						YES	NO

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

	Lee, Chin C., and Chien, David H., "Thermal and Package Design of High Power Laser Diodes," IEEE, 1993, Ninth IEEE Semi-Therm Symposium, pp 75-80.
	Sehmbey, Mairinder S., Chow, Louis C., Pais, Martin R. and Mahefkey, Tom, "High Heat Flux Spray Cooling of Electronics," AMERICAN INSTITUTE OF PHYSICS, January, 1995, pp 903-909.
	Mudawar, I. and Estes, K.A., "Optimizing and Predicting CHF in Spray Cooling of a Square Surface," JOURNAL OF HEAT TRANSFER, August, 1996, Vol. 118, pp 672-679.

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	2,858,355	Oct. 28, 1958	Narbut	174	15
	2,849,523	Aug. 26, 1958	Narbut	174	15
	2,643,282	June 23, 1953	Greene	174	15
	5,992,159	Nov. 30, 1999	Edwards et al.	62	64
	5,797,274	Aug. 25, 1998	Jackaman et al.	62	171
	5,247,426	Sep. 21, 1993	Hamburgen et al.	361	705
	5,212,975	May 25, 1993	Ginzburg	72	43
	6,550,263 B2	Apr. 22, 2003	Patel et al.	62	259.2
	6,484,521 B2	Nov. 26, 2002	Patel et al.	62	171
	6,612,120 B2	Sep. 2, 2003	Patel et al.	62	171

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRANSLATION	
						YES	NO

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

	Denney, D. Lawrence, "High Heat Flux Cooling Via a Monodisperse Controllable Spray", A Thesis Presented to The Academic Faculty of Georgia Institute of Technology in Partial Fulfillment of the Requirements for the Degree Master of Science in Mechanical Engineering, March 1996.

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